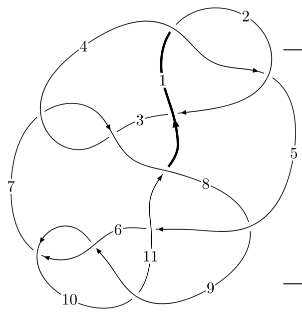
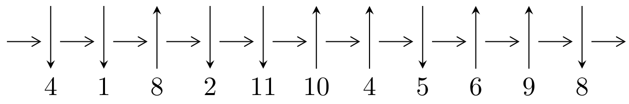
$11n_{55}$ ($K11n_{55}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$1,4 \xrightarrow[c_1]{} 2 \xrightarrow[c_4]{} 5,8 \xrightarrow[c_8]{} 9 \xrightarrow[c_3]{} 3 \xrightarrow[c_{11}]{} 11 \xrightarrow[c_5]{} 6 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_6]{} 7 \twoheadrightarrow c_2, c_7, c_9$$

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$$I_1^u = \langle -43u^{35} - 186u^{34} + \cdots + 32b + 285,\ 41u^{35} + 278u^{34} + \cdots + 4a + 100,\ u^{36} + 7u^{35} + \cdots + 7u + 1 \rangle$$
$$I_2^u = \langle b^6 - b^5 - b^4 + 2b^3 - b + 1,\ a,\ u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 42 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle -43u^{35} - 186u^{34} + \cdots + 32b + 285,\ 41u^{35} + 278u^{34} + \cdots + 4a + 100,\ u^{36} + 7u^{35} + \cdots + 7u + 1 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{41}{4}u^{35} - \frac{139}{2}u^{34} + \cdots - 126u - 25 \\ 1.34375u^{35} + 5.81250u^{34} + \cdots - 28.4375u - 8.90625 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -12.5938u^{35} - 82.0625u^{34} + \cdots - 128.313u - 23.8438 \\ -0.906250u^{35} - 9.43750u^{34} + \cdots - 50.6875u - 13.9063 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ 0.0312500u^{35} + 0.187500u^{34} + \cdots + 1.18750u + 0.0312500 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.0312500u^{35} - 0.187500u^{34} + \cdots - 1.18750u - 0.0312500 \\ -0.906250u^{35} - 5.50000u^{34} + \cdots - 4.75000u - 0.968750 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.625000u^{35} - 3.81250u^{34} + \cdots - 4.06250u + 0.312500 \\ 0.968750u^{35} + 5.87500u^{34} + \cdots + 6.12500u + 1.03125 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{41}{4}u^{35} + \frac{139}{2}u^{34} + \cdots + 126u + 25 \\ -2.84375u^{35} - 13.8125u^{34} + \cdots + 33.9375u + 11.1563 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{41}{4}u^{35} + \frac{139}{2}u^{34} + \cdots + 126u + 25 \\ -2.84375u^{35} - 13.8125u^{34} + \cdots + 33.9375u + 11.1563 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{161}{16}u^{35} + \frac{897}{16}u^{34} + \cdots - \frac{87}{16}u - \frac{49}{8}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{36} - 7u^{35} + \cdots - 7u + 1$
c_2	$u^{36} + 9u^{35} + \cdots + 11u + 1$
c_3, c_7	$u^{36} - u^{35} + \cdots - 128u + 64$
c_5	$u^{36} - 6u^{35} + \cdots - 74u + 17$
c_6, c_9	$u^{36} - 2u^{35} + \cdots - 2u + 1$
c_8	$u^{36} + 2u^{35} + \cdots - 56u + 49$
c_{10}	$u^{36} - 18u^{35} + \cdots - 2u + 1$
c_{11}	$u^{36} - 2u^{35} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{36} - 9y^{35} + \cdots - 11y + 1$
c_2	$y^{36} + 43y^{35} + \cdots + 57y + 1$
c_3, c_7	$y^{36} - 39y^{35} + \cdots - 61440y + 4096$
c_5	$y^{36} + 14y^{35} + \cdots + 2990y + 289$
c_6, c_9	$y^{36} - 18y^{35} + \cdots - 2y + 1$
c_8	$y^{36} + 6y^{35} + \cdots + 490y + 2401$
c_{10}	$y^{36} + 2y^{35} + \cdots + 18y + 1$
c_{11}	$y^{36} + 42y^{35} + \cdots - 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.061290 + 0.326287I$ $a = -0.642038 - 0.460220I$ $b = 0.303700 + 0.290509I$	$-0.00265 + 2.23213I$	$-0.68244 - 4.15610I$
$u = 1.061290 - 0.326287I$ $a = -0.642038 + 0.460220I$ $b = 0.303700 - 0.290509I$	$-0.00265 - 2.23213I$	$-0.68244 + 4.15610I$
$u = 0.515673 + 0.710660I$ $a = -0.862097 - 0.946791I$ $b = 0.155712 + 0.653329I$	$2.02771 - 6.40530I$	$1.88436 + 7.11312I$
$u = 0.515673 - 0.710660I$ $a = -0.862097 + 0.946791I$ $b = 0.155712 - 0.653329I$	$2.02771 + 6.40530I$	$1.88436 - 7.11312I$
$u = 0.785644 + 0.339119I$ $a = 0.531433 + 0.754793I$ $b = -0.166697 - 0.401361I$	$-1.48377 - 1.33270I$	$-5.42230 + 4.02694I$
$u = 0.785644 - 0.339119I$ $a = 0.531433 - 0.754793I$ $b = -0.166697 + 0.401361I$	$-1.48377 + 1.33270I$	$-5.42230 - 4.02694I$
$u = 1.177000 + 0.085808I$ $a = 0.589499 + 0.125039I$ $b = -0.316874 - 0.078348I$	$-2.50865 - 0.37469I$	$-1.90153 - 1.63609I$
$u = 1.177000 - 0.085808I$ $a = 0.589499 - 0.125039I$ $b = -0.316874 + 0.078348I$	$-2.50865 + 0.37469I$	$-1.90153 + 1.63609I$
$u = -0.888941 + 0.845189I$ $a = 0.755005 + 0.931742I$ $b = 0.44408 - 1.66748I$	$3.30506 + 0.68404I$	$-1.00000 + 0.503330I$
$u = -0.888941 - 0.845189I$ $a = 0.755005 - 0.931742I$ $b = 0.44408 + 1.66748I$	$3.30506 - 0.68404I$	$-1.00000 - 0.503330I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.512682 + 0.569033I$ $a = 0.780897 + 0.985416I$ $b = -0.113983 - 0.584856I$	$-0.43379 - 1.94575I$	$-1.80433 + 3.98828I$
$u = 0.512682 - 0.569033I$ $a = 0.780897 - 0.985416I$ $b = -0.113983 + 0.584856I$	$-0.43379 + 1.94575I$	$-1.80433 - 3.98828I$
$u = 1.231010 + 0.192137I$ $a = -0.699294 - 0.225880I$ $b = 0.379504 + 0.152175I$	$-0.47071 - 4.51088I$	$0.51157 + 3.50709I$
$u = 1.231010 - 0.192137I$ $a = -0.699294 + 0.225880I$ $b = 0.379504 - 0.152175I$	$-0.47071 + 4.51088I$	$0.51157 - 3.50709I$
$u = -0.977681 + 0.835405I$ $a = -0.710165 - 0.943837I$ $b = -0.44152 + 1.76315I$	$3.02757 + 5.62134I$	$-1.94819 - 5.64508I$
$u = -0.977681 - 0.835405I$ $a = -0.710165 + 0.943837I$ $b = -0.44152 - 1.76315I$	$3.02757 - 5.62134I$	$-1.94819 + 5.64508I$
$u = 0.268102 + 0.646439I$ $a = -0.923789 - 1.064280I$ $b = 0.005979 + 0.692881I$	$3.06250 + 1.09495I$	$4.73244 - 0.17091I$
$u = 0.268102 - 0.646439I$ $a = -0.923789 + 1.064280I$ $b = 0.005979 - 0.692881I$	$3.06250 - 1.09495I$	$4.73244 + 0.17091I$
$u = -0.813768 + 1.033210I$ $a = 0.813317 + 1.002390I$ $b = 0.26375 - 1.59543I$	$6.28852 - 0.72428I$	0
$u = -0.813768 - 1.033210I$ $a = 0.813317 - 1.002390I$ $b = 0.26375 + 1.59543I$	$6.28852 + 0.72428I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.791993 + 1.084540I$ $a = -0.827522 - 1.018650I$ $b = -0.21954 + 1.58084I$	$9.06514 - 5.65458I$	$3.21416 + 3.51542I$
$u = -0.791993 - 1.084540I$ $a = -0.827522 + 1.018650I$ $b = -0.21954 - 1.58084I$	$9.06514 + 5.65458I$	$3.21416 - 3.51542I$
$u = -0.890160 + 1.056150I$ $a = -0.787704 - 1.021790I$ $b = -0.24615 + 1.66009I$	$10.62450 + 2.78646I$	$4.96714 + 0.I$
$u = -0.890160 - 1.056150I$ $a = -0.787704 + 1.021790I$ $b = -0.24615 - 1.66009I$	$10.62450 - 2.78646I$	$4.96714 + 0.I$
$u = -0.584281 + 0.166417I$ $a = \quad 1.042350 + 0.296118I$ $b = \quad 1.36445 - 0.54728I$	$-0.74873 + 6.02926I$	$3.12323 - 6.76386I$
$u = -0.584281 - 0.166417I$ $a = \quad 1.042350 - 0.296118I$ $b = \quad 1.36445 + 0.54728I$	$-0.74873 - 6.02926I$	$3.12323 + 6.76386I$
$u = -1.094200 + 0.888442I$ $a = -0.670282 - 0.996339I$ $b = -0.35959 + 1.85999I$	$5.38321 + 7.74752I$	0
$u = -1.094200 - 0.888442I$ $a = -0.670282 + 0.996339I$ $b = -0.35959 - 1.85999I$	$5.38321 - 7.74752I$	0
$u = -1.07312 + 0.94681I$ $a = \quad 0.693971 + 1.015250I$ $b = \quad 0.31569 - 1.82618I$	$10.02090 + 4.50426I$	0
$u = -1.07312 - 0.94681I$ $a = \quad 0.693971 - 1.015250I$ $b = \quad 0.31569 + 1.82618I$	$10.02090 - 4.50426I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.12915 + 0.89488I$ $a = 0.657336 + 1.008600I$ $b = 0.34290 - 1.88751I$	$7.9678 + 12.8462I$	0
$u = -1.12915 - 0.89488I$ $a = 0.657336 - 1.008600I$ $b = 0.34290 + 1.88751I$	$7.9678 - 12.8462I$	0
$u = -0.540727 + 0.094568I$ $a = -1.134090 - 0.180057I$ $b = -1.312240 + 0.291727I$	$-2.55842 + 1.10908I$	$-0.054318 - 1.238814I$
$u = -0.540727 - 0.094568I$ $a = -1.134090 + 0.180057I$ $b = -1.312240 - 0.291727I$	$-2.55842 - 1.10908I$	$-0.054318 + 1.238814I$
$u = -0.267380 + 0.307929I$ $a = 1.39318 + 0.77500I$ $b = 0.600824 - 0.555255I$	$1.71662 - 0.40164I$	$5.72630 + 0.15643I$
$u = -0.267380 - 0.307929I$ $a = 1.39318 - 0.77500I$ $b = 0.600824 + 0.555255I$	$1.71662 + 0.40164I$	$5.72630 - 0.15643I$

II. $I_2^u = \langle b^6 - b^5 - b^4 + 2b^3 - b + 1,\ a,\ u - 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -b \\ b \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -b^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} b^2 - 1 \\ -b^4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} b^4 - b^2 + 1 \\ -b^4 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ b \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= b^5 + 4b^4 - 2b^3 - 4b^2 + 6b - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^6$
c_2, c_4	$(u+1)^6$
c_3, c_7	u^6
c_5, c_{10}	$u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1$
c_6, c_8, c_{11}	$u^6 - u^5 - u^4 + 2u^3 - u + 1$
c_9	$u^6 + u^5 - u^4 - 2u^3 + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^6$
c_3, c_7	y^6
c_5, c_{10}	$y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1$
c_6, c_8, c_9 c_{11}	$y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0$ $b = -1.002190 + 0.295542I$	$-3.53554 + 0.92430I$	$-9.40317 - 0.69886I$
$u = 1.00000$ $a = 0$ $b = -1.002190 - 0.295542I$	$-3.53554 - 0.92430I$	$-9.40317 + 0.69886I$
$u = 1.00000$ $a = 0$ $b = 0.428243 + 0.664531I$	$0.245672 + 0.924305I$	$0.635956 + 0.093695I$
$u = 1.00000$ $a = 0$ $b = 0.428243 - 0.664531I$	$0.245672 - 0.924305I$	$0.635956 - 0.093695I$
$u = 1.00000$ $a = 0$ $b = 1.073950 + 0.558752I$	$-1.64493 - 5.69302I$	$-5.23279 + 4.86918I$
$u = 1.00000$ $a = 0$ $b = 1.073950 - 0.558752I$	$-1.64493 + 5.69302I$	$-5.23279 - 4.86918I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{36} - 7u^{35} + \cdots - 7u + 1)$
c_2	$((u+1)^6)(u^{36} + 9u^{35} + \cdots + 11u + 1)$
c_3, c_7	$u^6(u^{36} - u^{35} + \cdots - 128u + 64)$
c_4	$((u+1)^6)(u^{36} - 7u^{35} + \cdots - 7u + 1)$
c_5	$(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)(u^{36} - 6u^{35} + \cdots - 74u + 17)$
c_6	$(u^6 - u^5 - u^4 + 2u^3 - u + 1)(u^{36} - 2u^{35} + \cdots - 2u + 1)$
c_8	$(u^6 - u^5 - u^4 + 2u^3 - u + 1)(u^{36} + 2u^{35} + \cdots - 56u + 49)$
c_9	$(u^6 + u^5 - u^4 - 2u^3 + u + 1)(u^{36} - 2u^{35} + \cdots - 2u + 1)$
c_{10}	$(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)(u^{36} - 18u^{35} + \cdots - 2u + 1)$
c_{11}	$(u^6 - u^5 - u^4 + 2u^3 - u + 1)(u^{36} - 2u^{35} + \cdots - 2u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^6)(y^{36} - 9y^{35} + \cdots - 11y + 1)$
c_2	$((y-1)^6)(y^{36} + 43y^{35} + \cdots + 57y + 1)$
c_3, c_7	$y^6(y^{36} - 39y^{35} + \cdots - 61440y + 4096)$
c_5	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{36} + 14y^{35} + \cdots + 2990y + 289)$
c_6, c_9	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{36} - 18y^{35} + \cdots - 2y + 1)$
c_8	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{36} + 6y^{35} + \cdots + 490y + 2401)$
c_{10}	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{36} + 2y^{35} + \cdots + 18y + 1)$
c_{11}	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{36} + 42y^{35} + \cdots - 2y + 1)$